1/7



TRACK FOLLOWING ALONG A FIRST REFERENCE TRACK, DEFINED BY PREVIOUSLY WRITTEN SERVO BURST PATTERNS, USING A SERVO CONTROL LOOP WHILE WRITING SERVO BURST PATTERNS AT A FIRST TARGET RADIAL LOCATION, THE SERVO CONTROL LOOP HAVING A CLOSED-LOOP RESPONSE AND INCLUDING A TWO-DIMENSIONAL DIGITAL STATE COMPENSATOR HAVING A FIRST INPUT FOR RECEIVING POSITION ERROR SIGNALS, A FIRST OUTPUT FOR GENERATING CONTROL SIGNALS FOR POSITIONING A TRANSDUCER HEAD WITH RESPECT TO THE SELECTED TRACK DURING TRACK FOLLOWING, A SECOND OUTPUT FOR GENERATING TRACK-FOLLOWING STATE VARIABLES, AND A SECOND INPUT FOR RECEIVING COMBINED STATE VARIABLES

PROCESSING AND STORING THE TRACK-FOLLOWING STATE VARIABLES
GENERATED AT THE SECOND OUTPUT DURING THE WRITING OF THE SERVO
BURST PATTERNS AT THE FIRST TARGET RADIAL LOCATION

TRACK FOLLOWING ALONG A SECOND REFERENCE TRACK, DEFINED BY PREVIOUSLY WRITTEN SERVO BURST PATTERNS, USING THE SERVO CONTROL LOOP WHILE WRITING SERVO BURST PATTERNS AT A SECOND TARGET RADIAL LOCATION ON THE MAGNETIC DISK MEDIUM

PROCESSING AND STORING THE TRACK-FOLLOWING STATE VARIABLES
GENERATED AT THE SECOND OUTPUT DURING THE WRITING OF THE SERVO
BURST PATTERNS ON THE SECOND TARGET RADIAL LOCATION

TRACK FOLLOWING ALONG A THIRD REFERENCE TRACK, DEFINED BY THE PREVIOUSLY WRITTEN SERVO BURST PATTERNS AT THE FIRST AND SECOND RADIAL TARGET LOCATIONS, USING THE SERVO CONTROL LOOP WHILE WRITING SERVO BURST PATTERNS AT A THIRD TARGET RADIAL LOCATION, WHEREIN THE PROCESSED AND STORED TRACK-FOLLOWING STATE VARIABLES GENERATED AT THE SECOND OUTPUT DURING WRITING OF THE SERVO BURST PATTERNS AT THE FIRST AND SECOND TARGET RADIAL LOCATIONS ARE COMBINED, AND THE COMBINED TRACK FOLLOWING STATE VARIABLES ARE APPLIED TO THE SECOND INPUT DURING WRITING OF THE SERVO BURST PATTERNS AT THE THIRD TARGET RADIAL LOCATION.

RETURN -

FIG. 1

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2/7

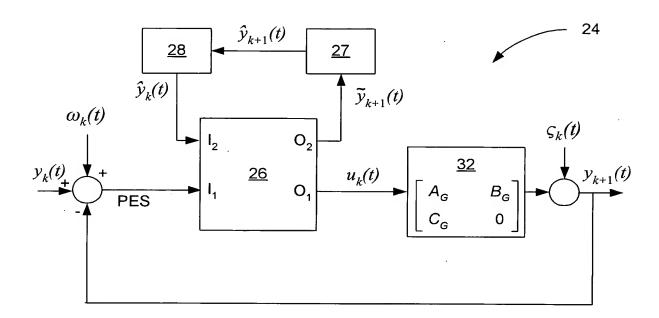
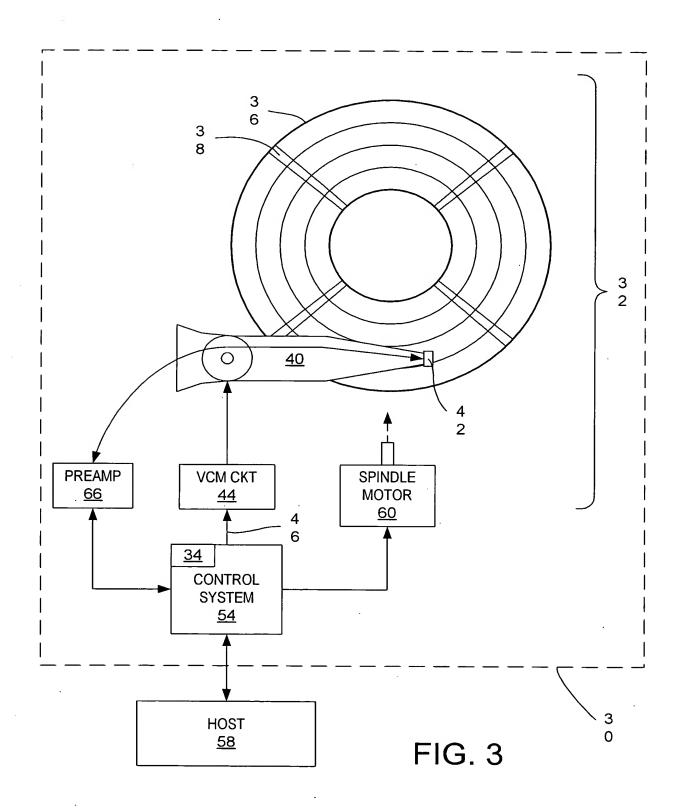


FIG. 2





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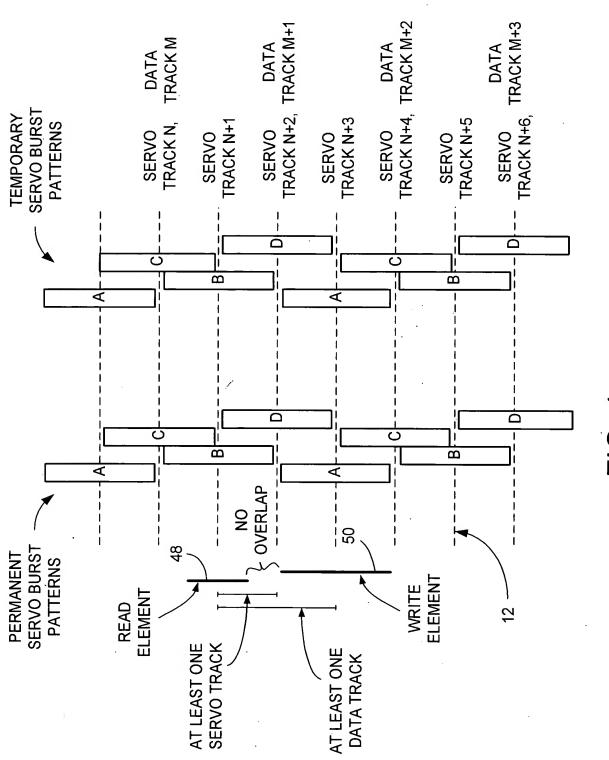
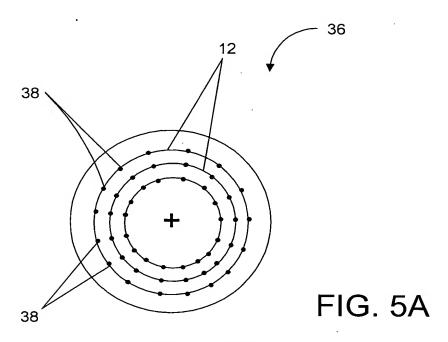
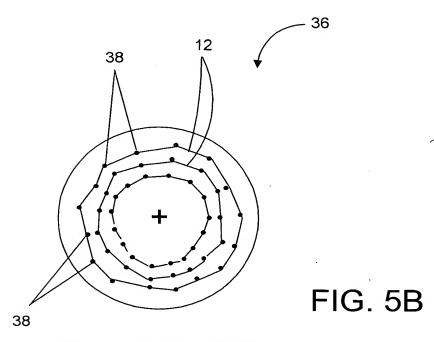


FIG. 4

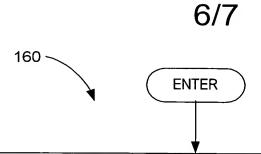
5/7



IDEAL SERVO TRACKS



WRITTEN SERVO TRACKS



TRACK FOLLOW A REFERENCE TRACK USING A SERVO CONTROL LOOP WHILE FORMING SERVO BURST PATTERNS DEFINING A FIRST TARGET TRACK, THE SERVO LOOP HAVING A CLOSED-LOOP RESPONSE AND INCLUDING A TWO-DIMENSIONAL DIGITAL STATE COMPENSATOR HAVING FIRST AND SECOND INPUTS AND FIRST AND SECOND OUTPUTS, THE FIRST INPUT FOR RECEIVING POSITION ERROR SIGNALS, THE FIRST OUTPUT FOR GENERATING CONTROL SIGNALS FOR POSITIONING A TRANSDUCER HEAD WITH RESPECT TO THE SELECTED TRACK DURING TRACK FOLLOWING, THE SECOND OUTPUT FOR GENERATING TRACK-FOLLOWING STATE VARIABLES, AND THE FIRST INPUT FOR RECEIVING PROCESSED AND STORED TRACK-FOLLOWING STATE VARIABLES

PROCESS AND STORE THE TRACK-FOLLOWING STATE VARIABLES GENERATED AT THE SECOND OUTPUT WHILE FORMING SERVO BURST PATTERNS DEFINING THE FIRST TARGET TRACK

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TRACK FOLLOW THE FIRST TARGET TRACK USING THE SERVO CONTROL LOOP WHILE FORMING SERVO BURST PATTERNS ON A SECOND TARGET TRACK, WHEREIN THE PROCESSED AND STORED TRACK-FOLLOWING STATE VARIABLES GENERATED AT THE SECOND OUTPUT DURING FORMING OF THE SERVO PATTERNS DEFINING THE FIRST TARGET TRACK ARE APPLIED TO THE SECOND INPUT WHILE FORMING THE SERVO BURST PATTERNS DEFINING THE SECOND TARGET TRACK

RETURN

FIG. 6

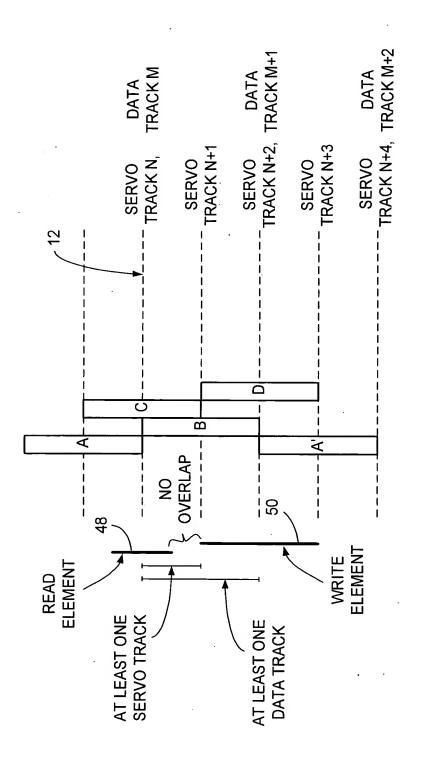


FIG. 7